

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-25 (canceled).

Claim 26 (new): A method for therapeutic modulation of one or more matrix metalloproteinases (MMPs), comprising the steps of:

identifying an elevated level of one or more MMPs expressed in tissue;

administering a composition to the tissue to modulate the expression of one or more MMPs, wherein said composition comprises a pharmaceutically effective amount of at least one metal ion selected from zinc, rubidium or a combination of zinc and rubidium ions in a physiologically inert carrier;

monitoring the demodulation of the one or more MMPs in the tissue; and

re-administering the composition to the tissue until the one or more MMP levels return near zero.

Claim 27 (new): The method of Claim 1, wherein the tissue being therapeutically modulated for MMP expression is a chronic wound.

Claim 28 (new): The method of Claim 27 wherein the chronic wound being treated is an open, full thickness tissue wound.

Claim 29 (new): The method of Claim 27 wherein the chronic wound being treated is subsurface traumatized tissue.

Claim 30 (new): The method of Claim 26, wherein the identifying step further comprises taking and examining a biopsy of the tissue to determine whether an elevated level of the one or more MMPs is being expressed.

Claim 31 (new): The method of Claim 30, wherein the monitoring step further comprises taking and examining a biopsy of the tissue to determine whether the expression of the one or more MMPs has declined.

Claim 32 (new): The method of Claim 31, wherein the administering and re-administering steps further comprise substantially and fully filling a wound cavity with the composition to ensure that the composition reaches both the outer edges of the wound cavity and the deep, inner recesses of the wound cavity.

Claim 33 (new): The method of Claim 26, wherein the composition applied in the administering step further comprises a pharmaceutically effective amount of calcium ions.

Claim 34 (new): The method of Claim 26, wherein the composition applied in the administering step further comprises a pharmaceutically effective amount of potassium ions.

Claim 35 (new): The method of claim 26 wherein the composition applied in the administering step further comprises a sufficient amount of an acid to adjust the pH to about 5.0.

Claim 36 (new): The method of claim 35 wherein the composition applied in the administering step further comprises a sufficient amount of citric acid to adjust the pH to about 5.0.

Claim 37 (new): A method for therapeutic modulation of a matrix metalloproteinase (MMP), comprising the steps of:

identifying an elevated level of MMP-2 or MMP-9 expressed in tissue;

administering a composition to the tissue to modulate the expression of MMP-2 or MMP-9, wherein said composition comprises a pharmaceutically effective amount of at least one metal ion selected from zinc, rubidium or a combination of zinc and rubidium ions in a physiologically inert carrier;

monitoring the demodulation of the MMP-2 or MMP-9 in the tissue; and

re-administering the composition to the tissue until MMP levels return near zero.

Claim 38 (new): The method of Claim 37, wherein the tissue being therapeutically modulated for MMP expression is a chronic wound.

Claim 39 (new): The method of Claim 37, wherein the identifying step further comprises taking and examining a biopsy of the tissue to determine whether an elevated level of MMP-2 or MMP-9 is being expressed.

Claim 40 (new): The method of Claim 39, wherein the monitoring step further comprises taking and examining a biopsy of the tissue to determine whether the expression of MMP-2 or MMP-9 has declined.